

Patent Claims

1. A circuit arrangement as an interface between a
5 SIM card (1) and a GSM modem (2), which has a
bidirectional data line (5) which connects a card data
input/output of the SIM card to a modem data
input/output of the GSM modem,
characterized in that
10 the data line (5) is coupled to at least one edge
driver (12, 13).

2. The circuit arrangement as claimed in claim 1,
characterized in that
15 the data line (5) is coupled to at least one edge
driver (12, 13), both at the modem end and at the card
end.

3. The circuit arrangement as claimed in claim 1 or
20 2,
characterized in that
positive (12) and negative (13) edge drivers are
provided.

- 25 4. The circuit arrangement as claimed in claim 1 or
2,
characterized in that
only positive edge drivers (12) are provided.

- 30 5. The circuit arrangement as claimed in one of the
preceding claims,
characterized in that
the or each edge driver (12, 13) is formed from
discrete components.

- 35 6. The circuit arrangement as claimed in one of the
preceding claims, in particular as claimed in claim 5,
characterized in that

the or each edge driver (12, 13) is in each case matched to different signal frequencies, in particular by the capacitance of a coupling capacitor (25, 25') which couples the edge drivers (12, 13) to the data line (5).

7. The circuit arrangement as claimed in one of the preceding claims, in particular as claimed in claim 5 or 6,

10 characterized by
a resistor (30, 30'), which is connected downstream from the coupling capacitor (25, 25'), in order to improve the interference voltage separation.

15 8. The circuit arrangement as claimed in one of the preceding claims, in particular as claimed in one of claims 5 to 7,
characterized in that
the response threshold of the or each edge driver (12, 13) can in each case be set or tuned in particular by insertion of a resistor (32, 32') into the circuit.

9. The circuit arrangement as claimed in one of the preceding claims, in particular as claimed in one of
25 claims 5 to 8,
characterized by
a capacitor (33, 33') in order to improve the response to transient interference.

30 10. A method for bidirectional data transmission between a SIM card (1) and a GSM modem (2),
characterized in that
the bidirectional data transmission takes place without the use of a control signal for the data direction on a
35 data line (5) which connects the SIM card (1) and the GSM modem (2).

11. The method as claimed in claim 10,

characterized in that
one or more edge drivers (12, 13) is or are used for
conditioning of the signal on the data line.

5 12. The method as claimed in claim 11,
characterized in that
the edge driver or drivers (12, 13) can in each case be
optimized to the clock rate of the data transmission,
for example by suitable choice of a coupling capacitor
10 (25, 25').

13. The method as claimed in claim 11 or 12,
characterized in that
the interference voltage separation of the edge driver
15 or drivers (12, 13) which is or are used can in each
case be set, for example, by means of a resistor (30,
30').

14. The method as claimed in one of claims 11 to 13,
20 characterized in that
the response threshold of the edge driver or drivers
(12, 13) which is or are used can in each case be set
or tuned, for example, by means of a resistor (32,
32').